

Filed June 4, 1949

COMPACTING PRESS

3 Sheets-Sheet 1



INVENTORS.
HARRY GUTHRIE BELL,
AND JACOB DOUGLAS GAY, JR.
Allen & Allen
ATTORNEYS.

Aug. 5, 1952

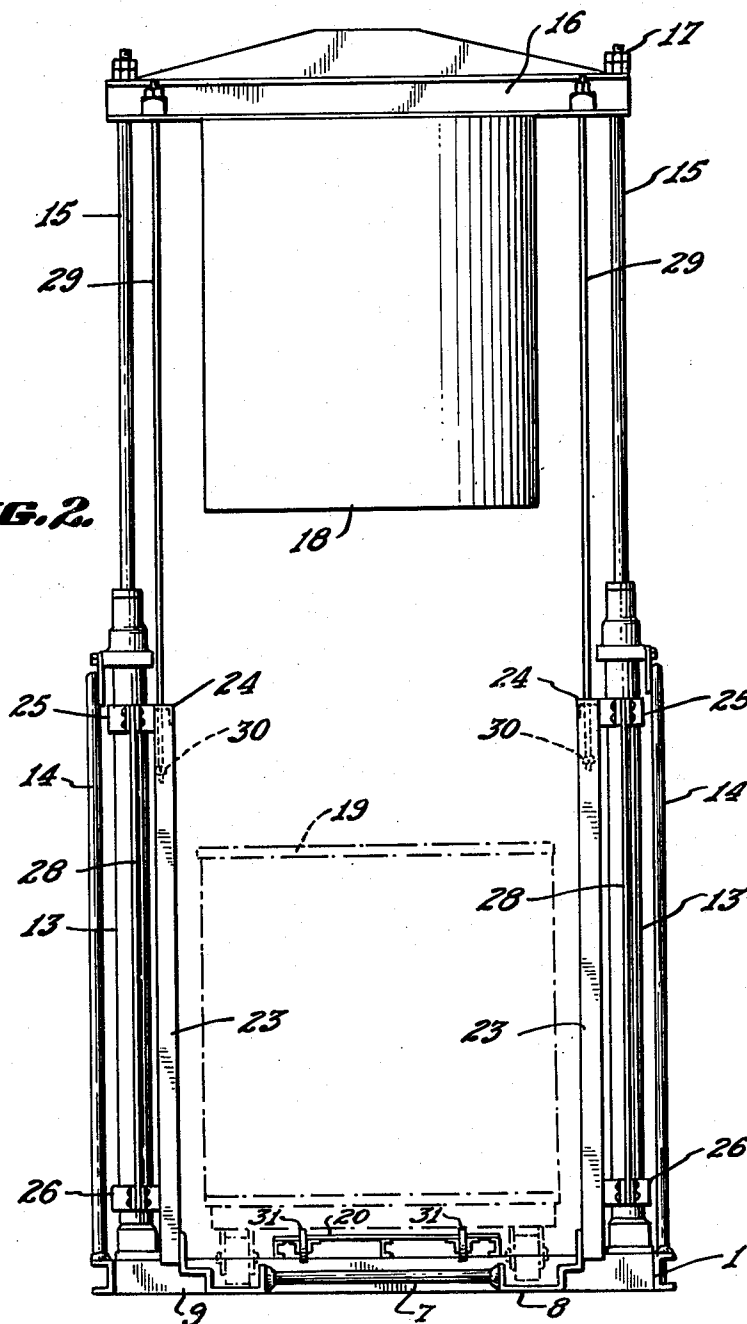
H. G. BELL ET AL
COMPACTING PRESS

2,605,697

Filed June 4, 1949

3 Sheets-Sheet 2

FIG. 2.



INVENTORS.
HARRY GUTHRIE BELL,
AND JACOB DOUGLAS GAY, JR.
Allen + Allen

ATTORNEYS.

Aug. 5, 1952

H. G. BELL ET AL
COMPACTING PRESS

2,605,697

Filed June 4, 1949

3 Sheets-Sheet 3

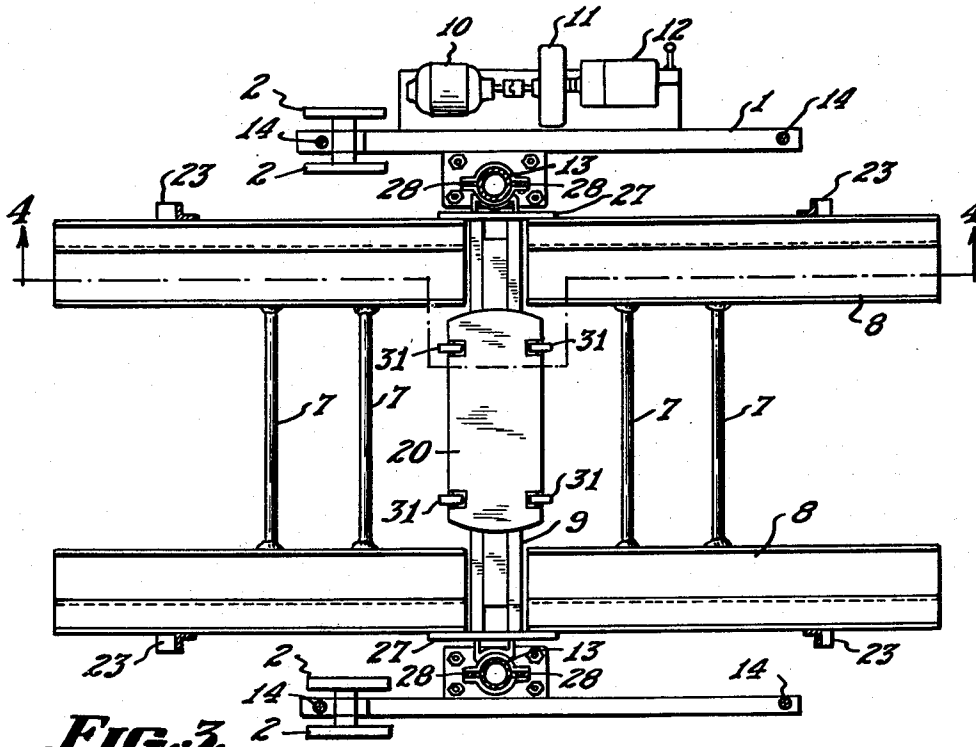


FIG. 3.

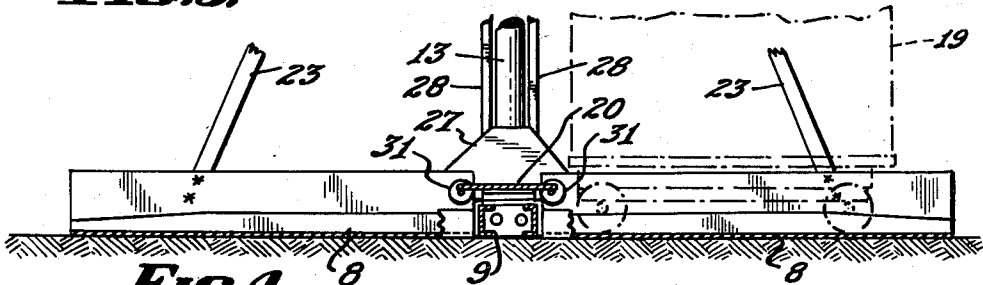


FIG. 4.

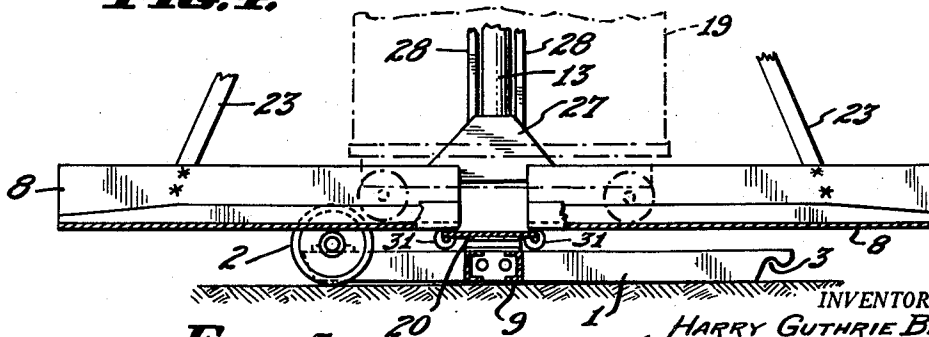


FIG. 5.

INVENTORS.
HARRY GUTHRIE BELL,
AND JACOB DOUGLAS GAY, JR.
Allen & Allen

ATTORNEYS.

UNITED STATES PATENT OFFICE

2,605,697

COMPACTING PRESS

Harry Guthrie Bell, Paris, and Jacob Douglas Gay, Jr., Lexington, Ky., assignors to Gay-Bell Corporation, Paris, Ky., a corporation of Kentucky

Application June 4, 1949, Serial No. 97,264

11 Claims. (Cl. 100—100)

1

Our invention relates to a compacting press for compacting or compressing material either in bales or in a container and it is particularly applicable for compacting cured tobacco in a hogshead.

While we do not intend to limit ourselves to a compacting press for compressing cured tobacco in a hogshead, we will refer to the press in this connection in the drawings and the following description since it is merely exemplary of a use of our press.

In the transporting and storage of cured tobacco, it is usually placed in a cylindrical hogshead having a flat bottom and a flat top. The tobacco is placed in the hogshead before the top is applied and usually a funnel device is placed over the top of the hogshead to hold the tobacco, which is to be compacted into the hogshead, but which in its loose state, of course, takes up very much more cubic space than the cubic overall of the hogshead. The hogshead, with its funnel-like device, and the loose tobacco, is placed under the ram of a hydraulic press with the lid usually positioned between the face of the ram and the tobacco. As the ram is brought down, compacting the tobacco and forcing it into the interior of the hogshead, the cover is carried down with it and fastened in position.

In the usual practice, these presses are complicated and ponderous stationary structures to which the material and the unfilled containers must be brought.

Usually this necessitates a separate building and the moving of the different parts and the tobacco from the warehouse in which the cured tobacco is stored to the separate building just for the loading of the hogshead.

It is an object of our invention to provide a press for compacting material which is transportable from place to place so that the press itself may be brought to the different places when the containers are being filled.

It is a further object of our invention to provide a portable press as described above and which has a set of tracks for guiding the dolly or truck upon which the material or the containers are transported to a position under the ram of the press.

It is a further object of our invention to provide a press as described above which compresses the cured tobacco while the tobacco alone, or contained in a hogshead, is mounted on a dolly or truck for transporting the same, and which is provided with means under the ram of the press for basing the floor of the dolly or truck on

2

an anvil, or the like, so as to remove any portion of the pressure of the downwardly moving ram from the casters or wheels of the dolly; all without the necessity of removing the tobacco or hogshead from the dolly.

It is a further object of our invention to provide a press as described above which is compact, portable, and self-contained, and wherein the only connection to any permanent or outside source is an electrical connection in the event an electric motor is used to actuate the device, while if a gasoline engine or any other self-contained power source is used in place of an electric motor, the press needs no outside connections at all.

These and other objects of our invention which will be set forth hereinafter or will be apparent to one skilled in the art upon reading these specifications, we accomplish by that certain construction and arrangement of parts of which we shall now describe an exemplary embodiment. Reference is now made to the drawings which form a part hereof, and in which:

Figure 1 is a side elevation of our novel press.

Figure 2 is a front elevation of our novel press.

Figure 3 is a horizontal cross section of our novel press taken on the section line 3—3 of Figure 1 and showing the track construction.

Figure 4 is a vertical cross section of the lower portion of our novel press taken on the section line 4—4 of Figure 3.

Figure 5 is a section similar to Figure 4 with the tracks raised.

Figure 6 is a cross section of the tracks and end bolt or support of our press with the tracks lowered and the dolly in position on its support.

Figure 7 is a perspective view of a hitch for transporting our novel press.

Briefly in the practice of our invention, we provide a tobacco press comprising a vertically reciprocating ram mounted on a yoke. Under the yoke is positioned a set of tracks for guiding the dolly carrying the material to be compressed into position below the ram. An anvil or support projecting upwardly from the tracks is provided below the ram. The tracks which guide the dolly are normally at floor level but may be raised to a point above the anvil or support so that the dolly carrying the material may be rolled into position over the support whereupon the tracks are lowered and the bottom of the dolly straddles and rests on the support with its casters or wheels out of contact with the track. Thus the floor of the dolly acts as the base or anvil against which the pressure of the downwardly moving ram is applied. The movement of the tracks is

attained by a framework which is fastened to the yoke of the ram so that the tracks are lifted upwardly when the ram reaches the highest part of its stroke.

In the description and in the drawings, we describe a press for compacting tobacco within a tobacco hogshead and which is operated by a hydraulic mechanism. We do not intend to limit ourselves to a press for this specific purpose, since the press may be used for other purposes, nor do we intend to limit ourselves to a press actuated by hydraulic means, since mechanical means or other means may be used for actuating our press.

Referring to the drawings, we provide a base 1 which normally rests upon the floor of the warehouse, but which is provided with wheels 2 to permit transporting of the device from place to place. One end of the base 1 has a cut out yoked portion 3 which accommodates the axle 4 of the hitch shown in Figure 7. The hitch has a bracket 5 terminating in a saddle-shaped end portion 6 which fits over one of the rods 7 which joins the tracks 8 together and which will be described later.

The two portions of the base 1 are joined together by channel irons 9 and the necessary mechanism for controlling and providing the hydraulic force preferably comprising an electric motor 10, a pump 11, and a manually controllable valve fixture 12 are conveniently mounted on the base 1, as shown in Figure 3.

Fastened to and projecting upwardly from the channels 9 of the base 1 are two hydraulic cylinders 13. These cylinders 13 are based in their upright position by braces 14 running from the ends of the cylinders 13 to the ends of the base 1.

The cylinders 13 carry a hydraulically actuated piston from which projects piston rods 15. On the ends of the piston rods 15 is provided a bridging yoke 16 held in place by nuts 17 or in any other convenient manner. Projecting downwardly from the yoke 16 is the ram of the press 18 which is preferably cylindrical in form and of a diameter which will permit it to enter into the opening of a tobacco hogshead 19.

The connection between the hydraulic actuating and control devices 10, 11, and 12 to the cylinders 13 is such that upon actuation of the manual control 12, the control of fluid to the cylinder 13 is such that the yoke 16 carrying the ram 18 may be raised and lowered at will.

Positioned between the cylinders 13 are parallel tracks 8. These tracks 8 are joined together by rods 7 and are preferably split so that when they rest upon the floor as shown in Figures 1, 4 and 6, the channel irons 9 will not interfere with them.

Mounted on the channel irons 9 directly below the ram 18 is the anvil or dolly support 20. This dolly support 20 projects upwardly from the tracks 8 when these tracks are at floor level and this support 20 provides a flat surface upon which the floor 21 of the dolly 22 may rest during the pressing operation.

The tracks 8 each carry an upwardly projecting A frame composed of slanting pieces 23 and a top cross piece 24. The top cross piece 24 carries a journal 25 which slidably surrounds the cylinders 13. A second journal 26 surrounding the cylinders 13 is positioned just above the tracks 5 and welded to the tracks by way of a fish plate 27. There are straps 28 running from the journal 25 to the journal 26 so as to make the A frame a sturdy and rigid structure which is vertically slidable upon the cylinders 13.

Projecting downwardly from the yoke 16 are a series of rods 29. These rods 29 are attached to the yoke 16 and slide into holes in the cross section 24 of the A frame. The portion of the rods 29 which project below the cross bar 24 carry abutments in the form of nuts 30. The nuts 30 are adjustable up and down the rods 29.

The positioning of the nuts 30 on the rods 29 is such that when the yoke 16 reaches its uppermost position 16', the nuts 30 by means of the rods 29 will lift the A frame by way of its top cross piece 24 to the position shown in broken lines as 24' in Figure 1. The adjustment of nuts 30 is such that when the A frame is lifted to the position 24', the tracks 8 will be above the surface of the anvil or support 20, as is indicated in Figure 5.

The operation of the above described device is as follows:

The container 19 which is loaded with the material to be compacted is mounted on the dolly 21. The yoke 16 of the press is lowered slightly from its uppermost position so that the tracks 8 rest on the floor. The dolly 22 is then rolled on its casters 21' to the position shown in broken lines in Figure 4. Thereupon the yoke 16 is moved upwardly by hydraulic pressure to the position 16' in Figure 1, through the rods 29 and the A frame. The tracks 8 are thus raised to the position shown in Figure 5, with the tracks 8 above the surface of the support 20. In this position, the dolly 22 is rolled under the ram 18 so that it straddles the dolly 20, as shown in broken lines in Figure 5. The whole structure is ready now for the lowering of the ram 18 to compact the tobacco in the container 19, while in the position shown in Figure 5. As hydraulic pressure is applied to lower the ram 18, the yoke 16 moving downwardly lowers the tracks 8 to the floor as shown in Figure 6. This lowers the dolly 22 so that its floor 21 rests directly on the anvil or support 20 as shown in Figure 6, and hence the floor of the dolly 21 bases itself against the anvil 20 to resist the downward pressure of the ram 18 and the casters 21' of the dolly 22 are free and bear none of this strain.

The anvil or support 20 may be provided with small casters 31 which permit the exact positioning of the floor 21 of the dolly 22 after the ram 18 has progressed a short distance downwardly.

After the ram has completed its downward stroke and compacted the material and it has been secured, the ram 18 is moved upwardly and the preceding procedure is reversed. That is, when the ram 18 reaches the top of its stroke, the tracks 8 are lifted to the position shown in Figure 5. This lifts the dolly 22 off the anvil 20 and permits it to be rolled off the anvil 20 to the position shown by the broken lines in Figure 4. Whereupon, the ram 18 and its yoke 16 is slightly lowered, thus placing the tracks 8 at floor level and permitting the complete removal of the dolly 22 with its load 19 and the replacement of a new dolly and load for treatment.

From the above it is apparent that we have provided a self-contained unitary and portable press for compacting material. We have provided means whereby material mounted upon a dolly may be readily positioned below the ram of the press and whereby the resistance to the pressure of the ram is borne by the floor of the dolly and not by the casters. We have provided a press where the control of the tracks which permits the above is accomplished by the actual

5

movement of the ram itself and wherein the whole device is rugged, simple, and relatively easy to construct and maintain and which may be readily movable from place to place.

It is apparent that the complete strain of the ram of the press is borne by the contents of the container and is between the lower surface of the ram and the upper surface of the floor of the dolly which is backed up by a support rigidly connected to the cylinders which create this pressure.

It is to be understood that different forms of our preferred form may be made without departing from the spirit of our invention.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A press for compacting material on a dolly comprising a ram mounted on a yoke reciprocable over a dolly support, dolly guiding tracks straddling said dolly support and provided with an upstanding frame, downwardly projecting rods mounted on said yoke and sliding through a portion of said frame, and nuts on a portion of the rods within the frame so that upon a predetermined elevation of the ram the rods will engage the frame and lift the tracks above the surface of the dolly support.

2. A press for compacting material on a dolly comprising upwardly projecting hydraulic cylinders mounted on a base and carrying reciprocating pistons having upwardly projecting piston rods, a yoke mounted on the ends of said piston rods and carrying a downwardly projecting ram, a dolly support mounted below said ram and projecting upwardly from the base, tracks straddling the dolly support, a frame mounted on the tracks and slidably receiving said cylinders, downwardly projecting rods mounted on the yoke and projecting through apertures in the frame, and abutments mounted on the rods within the frame so that the terminal upward movement of the ram will cause the abutments to engage the frame and lift the tracks above the dolly support.

3. A press for compacting material on a dolly comprising upwardly projecting hydraulic cylinders mounted on a base and carrying reciprocating pistons having upwardly projecting piston rods, a yoke mounted on the ends of said piston rods and carrying a downwardly projecting ram, a dolly support mounted below said ram and projecting upwardly from the base, tracks straddling the dolly support, a frame mounted on the tracks and slidably receiving said cylinders, downwardly projecting rods mounted on the yoke and projecting through apertures in the frame, and abutments mounted on the rods within the frame so that the terminal upward movement of the ram will cause the abutments to engage the frame and lift the tracks above the dolly support, said press base being provided with casters permitting the movement of the press over a surface.

4. A press for compacting material on a dolly comprising upwardly projecting hydraulic cylinders mounted on a base and carrying reciprocating pistons having upwardly projecting piston rods, a yoke mounted on the ends of said piston rods and carrying a downwardly projecting ram, a dolly support mounted below said ram and projecting upwardly from the base, tracks resting on the base and straddling the dolly support, a frame mounted on the tracks and slidably receiving said cylinders, downwardly projecting rods mounted on the yoke and projecting through apertures in

6

the frame, and abutments mounted on the rods within the frame so that the terminal upward movement of the ram will cause the abutments to engage the frame and lift the tracks above the dolly support, said press being movable, and having a hydraulic compressor and valve mounted thereon.

5. A press for compacting material on a dolly comprising a movable base, two spaced upwardly projecting hydraulic cylinders mounted on said base, piston rods projecting upwardly from said cylinders and having a yoke bridging their ends, a downwardly projecting pressing ram mounted on said yoke, a dolly support mounted on said base below said ram, tracks between the hydraulic cylinders and straddling the dolly support for guiding a dolly over said support, said tracks carrying a frame slidable on said cylinders, and means responsive to the movement of the yoke for raising and lowering the track above and below the surface of the dolly support.

6. A press for compacting material on a dolly comprising a movable base, two spaced upwardly projecting hydraulic cylinders mounted on said base, piston rods projecting upwardly from said cylinders and having a yoke bridging their ends, a downwardly projecting pressing ram mounted on said yoke, a dolly support mounted on said base below said ram, tracks between the hydraulic cylinders and straddling the dolly support for guiding a dolly over said support, said tracks carrying a frame slidable on said cylinders, and means responsive to the movement of the yoke for raising and lowering the track above and below the surface of the dolly support, said means comprising rods mounted on said yoke and slidably journaled in a portion of said frame and having abutments thereon within said frame so that during a predetermined upward movement of said rods the abutments will engage said frame and said frame and tracks will be lifted by said abutments.

7. A press for compacting material on a dolly comprising a movable base, two spaced upwardly projecting hydraulic cylinders mounted on said base, piston rods projecting upwardly from said cylinders and having a yoke bridging their ends, a downwardly projecting pressing ram mounted on said yoke, a dolly support mounted on said base below said ram, tracks between the hydraulic cylinders and straddling the dolly support for guiding a dolly over said support, said tracks carrying a frame slidable on said cylinders, and means responsive to the movement of the yoke for raising and lowering the track above and below the surface of the dolly support, said means comprising rods mounted on said yoke and slidably journaled in a portion of said frame and having abutments thereon within said frame so that during a predetermined upward movement of said rods the abutments will engage said frame and said frame and tracks will be lifted by said abutments, said abutments being movable along said rods.

8. A press for compacting material on a dolly comprising a movable base, two spaced upwardly projecting hydraulic cylinders mounted on said base, piston rods projecting upwardly from said cylinders and having a yoke bridging their ends, a downwardly projecting pressing ram mounted on said yoke, a dolly support mounted on said base below said ram, tracks between the hydraulic cylinders and straddling the dolly support for guiding a dolly over said support, said tracks carrying a frame slidable on

7

said cylinders, and means responsive to the movement of the yoke for raising and lowering the track above and below the surface of the dolly support, said means comprising rods mounted on said yoke and slidably journaled in a portion of said frame and having abutments thereon within said frame so that during a predetermined upward movement of said rods the abutments will engage said frame and said frame and tracks will be lifted by said abutments, said abutments being movable along said rods, and said movable base having casters for moving the same upon a surface.

9. A press for compacting material on a dolly comprising a movable base, two spaced upwardly projecting hydraulic cylinders mounted on said base, piston rods projecting upwardly from said cylinders and having a yoke bridging their ends, a downwardly projecting pressing ram mounted on said yoke, a dolly support mounted on said base below said ram, tracks between the hydraulic cylinders and straddling the dolly support for guiding a dolly over said support, said tracks carrying a frame slidable on said cylinders, and means responsive to the movement of the yoke for raising and lowering the track above and below the surface of the dolly support, said means comprising rods mounted on said yoke and slidably journaled in a portion of said frame and having abutments thereon within said frame so that during a predetermined upward movement of said rods the abutments will engage said frame and said frame and tracks will be lifted by said abutments, said abutments being movable along said rods, said movable base having casters for moving the same upon a surface, and said dolly support having upwardly projecting casters.

8

10. A press for compacting material on a dolly comprising a ram mounted on a yoke and a dolly support over which the ram is reciprocable, vertically movable dolly guiding tracks straddling said dolly support, lost motion connecting means between said yoke and said dolly guiding tracks so that upon a predetermined elevation of the ram and yoke said connecting means will lift the dolly above the surface of the dolly support.

11. A press for compacting material on a dolly comprising a ram and a dolly support over which the ram is reciprocable, vertically movable dolly guiding tracks straddling said dolly support, a linkage means between said ram and said dolly guiding tracks so that upon a predetermined elevation of the ram said linkage means will lift the track above the surface of the dolly support.

HARRY GUTHRIE BELL,
JACOB DOUGLAS GAY, JR.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
26,622	Rymes	Dec. 27, 1859
257,454	Alexander	May 9, 1882
1,475,842	MacIlwaine	Nov. 27, 1923
2,159,779	Cavin	May 23, 1939

FOREIGN PATENTS

Number	Country	Date
346,448	Germany	Dec. 31, 1921
872,396	France	Feb. 9, 1942
535,863	Great Britain	Apr. 24, 1941